



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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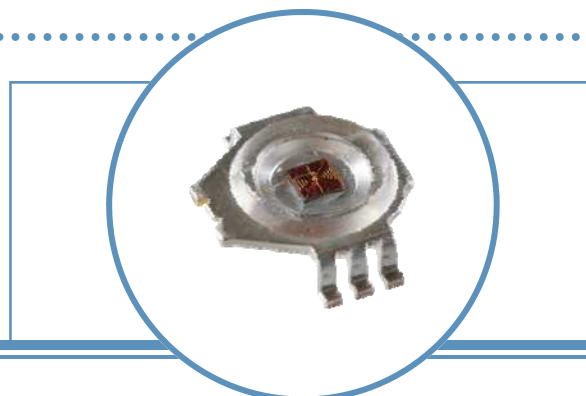


# Lednium Series Optimal I

## Flush Mount and Surface Mount Packages

### OVTL01LGAx Series

- Robust energy-efficient design with long operating life
- Low thermal resistance (2° C/W)
- Exceptional spatial uniformity
- Available in amber, blue, cyan, green, red, cool white, daylight white, and warm white



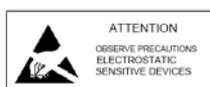
The **OVTL01LGAx Series** offers an energy-efficient packaged LED source providing high luminance, low thermal resistance, a water-clear lens, and a long operating lifespan. Devices have a 135° typical viewing angle with optional optics available and two mounting options:

1. Flush Mount—The shallow-gullwing package is designed to be countersunk into a hole or cavity in the PC board for a low profile of only 1.12mm.
2. Surface Mount—The deep-gullwing package is easily mounted on the solid surface of the PC board (Part numbers end in “S”)

### Applications

- Automotive exterior and interior lighting
- Architectural lighting
- Electronic signs and signals

Part Number	Viewing Angle	Emitted Color	Typical Luminous Flux (lm)	Package
OVTL01LGAA	135°	Amber	35	Flush Mount
OVTL01LGAB		Blue	12	Flush Mount
OVTL01LGAC		Cyan	40	Flush Mount
OVTL01LGAG		Green	60	Flush Mount
OVTL01LGAR		Red	45	Flush Mount
OVTL01LGAW		Cool White	65	Flush Mount
OVTL01LGAWD		Daylight White	60	Flush Mount
OVTL01LGAWW		Warm White	50	Flush Mount
OVTL01LGAAS		Amber	35	Surface Mount
OVTL01LGABS		Blue	12	Surface Mount
OVTL01LGACS		Cyan	40	Surface Mount
OVTL01LGAGS		Green	60	Surface Mount
OVTL01LGARS		Red	45	Surface Mount
OVTL01LGAWS		Cool White	65	Surface Mount
OVTL01LGAWDS		Daylight White	60	Surface Mount
OVTL01LGAWWS		Warm White	50	Surface Mount



**DO NOT LOOK DIRECTLY AT LED WITH UNSHIELDED EYES OR DAMAGE TO RETINA MAY OCCUR.**

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# Lednium Series Optimal I

## OVTL01LGA Series



### Absolute Maximum Ratings

DC Forward Current	0.35 A
Peak Pulsed Forward Current <sup>1</sup>	1 A
Reverse Voltage	5 V
Maximum Allowable Junction Temperature <sup>2</sup>	130° C
Storage and Operating Temperature	-50° ~ +85° C

Notes:

1. Pulse width 1 ms maximum. Duty cycle 1/16.
2. Thermal Resistance junction to Board ( $T_{j\theta}$ ) is 2° C/W, see Application Bulletin 238

### Electrical Characteristics ( $I_F = 350$ mA, $T_J = 25^\circ$ C)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS
$V_F$	Forward Voltage ( <b>Amber</b> )	1.9	2.3	2.6	V
	Forward Voltage ( <b>Blue</b> )	2.9	3.4	3.7	V
	Forward Voltage ( <b>Cyan &amp; Green</b> )	2.9	3.4	3.7	V
	Forward Voltage ( <b>Red</b> )	1.9	2.3	2.6	V
	Forward Voltage ( <b>White</b> )	2.9	3.4	3.7	V
	$V_{F-T}$ Temperature Co-efficient ( <b>Amber &amp; Red</b> )	----	-6.0	----	mV/°C
	$V_{F-T}$ Temperature Co-efficient ( <b>White &amp; Blue</b> )	----	-4.8	----	mV/°C
	$V_{F-T}$ Temperature Co-efficient ( <b>Cyan &amp; Green</b> )	----	-5.0	----	mV/°C

### Optical Characteristics ( $I_F = 350$ mA, $T_J = 25^\circ$ C)

COLOR	DOMINANT WAVELENGTH			SPECTRAL FULL-WIDTH HALF-MAXIMUM	DOMINANT WAVELENGTH TEMPERATURE DEPENDENCE
	MIN	TYP	MAX		
Amber	590	595	600	16 nm	0.08 nm/° C
Blue	455	460	465	24 nm	0.05 nm/° C
Cyan	500	505	510	37nm	0.04 nm/° C
Green	510	515	520	40 nm	0.04 nm/° C
Red	620	625	630	18 nm	0.05 nm/° C

Color	Minimum CCT (°K)	Maximum CCT (°K)	Chromaticity Coordinates				
Cool White	6400	7600	$C_x$	.298	.304	.316	.313
			$C_y$	.314	.297	.318	.34
Daylight White	5200	6400	$C_x$	.313	.317	.336	.338
			$C_y$	.341	.313	.345	.382
Warm White	3200	3800	$C_x$	.388	.403	.440	.419
			$C_y$	.375	.424	.440	.391

**OPTEK's Lednium Series Solid State Lighting products package the highest quality LED chips. Typically, the lumen output of these can be as high as 70% after 50,000 hours of operation. This prediction is based on specific test results and on tests on similar materials, and relies on strict observation of the design limits and ratings included in this data sheet.**

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# Lednium Series Optimal I

## OVTL01LGA Series

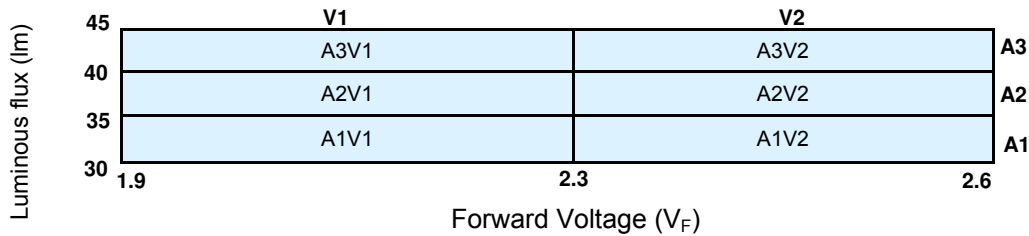


### Standard Bins

Lamps are sorted to luminous flux ( $\Phi$ ) and forward voltage ( $V_F$ ) bins shown. Orders may be filled with any or all bins contained as below.

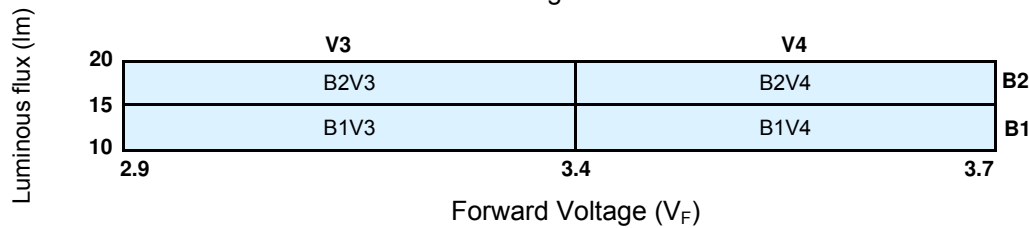
#### OVTL01LGAA and OVTL01LGAAS (AMBER) ( $I_F = 350$ mA)

Dominant Wavelength 590-600nm



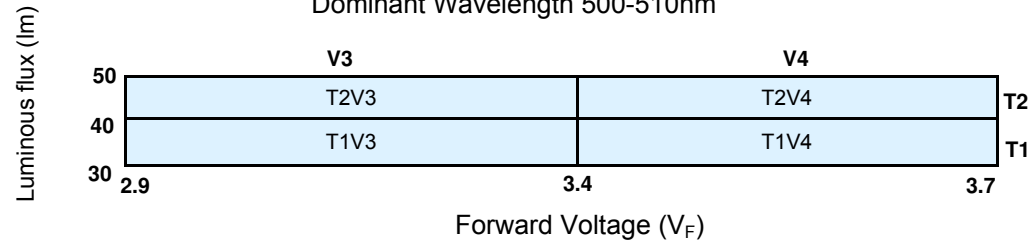
#### OVTL01LGAB and OVTL01LGABS (BLUE) ( $I_F = 350$ mA)

Dominant Wavelength 455-465nm



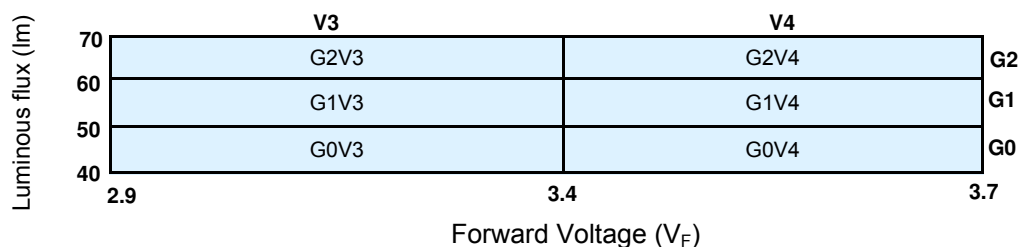
#### OVTL01LGAC and OVTL01LGACS (CYAN) ( $I_F = 350$ mA)

Dominant Wavelength 500-510nm



#### OVTL01LGAG and OVTL01LGAGS (GREEN) ( $I_F = 350$ mA)

Dominant Wavelength 510-520nm



#### Important Notes:

1. All ranks will be included per delivery, rank ratio will be based on the chip distribution.
2. To designate forward voltage and luminous flux ranks, please contact OPTeK.

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# Lednium Series Optimal I

## OVTL01LGA Series

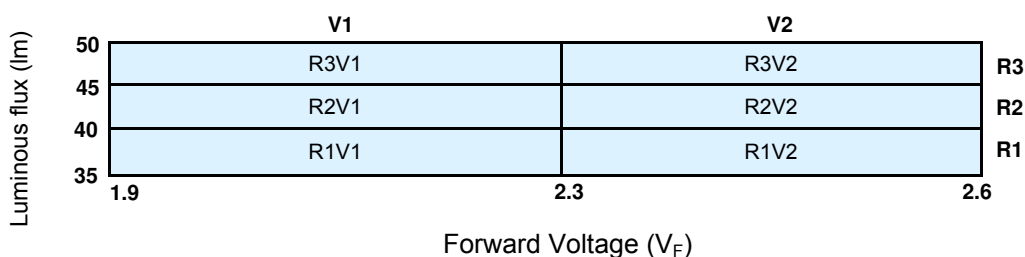


### Standard Bins

Lamps are sorted to luminous flux ( $\Phi$ ) and forward voltage ( $V_F$ ) bins shown. Orders may be filled with any or all bins contained as below.

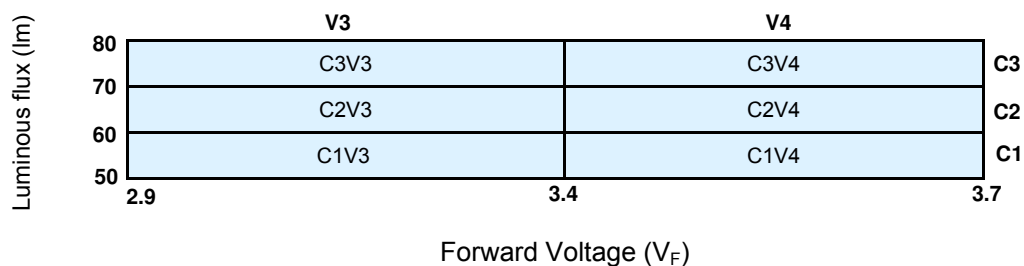
#### OVTL01LGAR and OVTL01LGARS (RED) ( $I_F = 350$ mA)

Dominant Wavelength 620-630nm



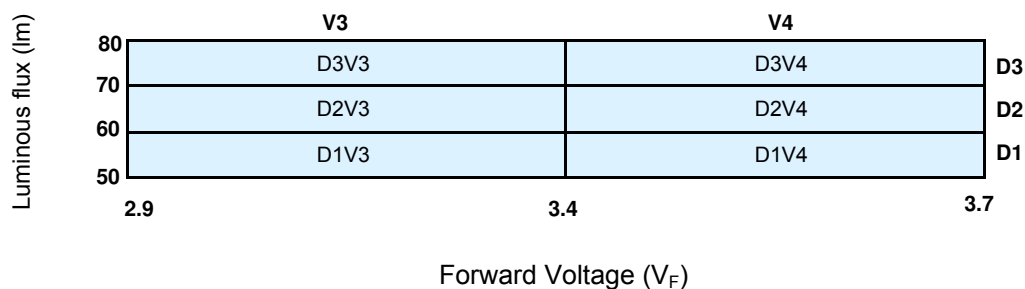
#### OVTL01LGAW and OVTL01LGAWS (COOL WHITE) ( $I_F = 350$ mA)

Typical CCT 7000°K ( $\pm 600^\circ$ K)



#### OVTL01LGAWD and OVTL01LGAWDS (DAYLIGHT WHITE) ( $I_F = 350$ mA)

Typical CCT 5800°K ( $\pm 600^\circ$ K)



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# Lednium Series Optimal I

## OVTL01LGA Series

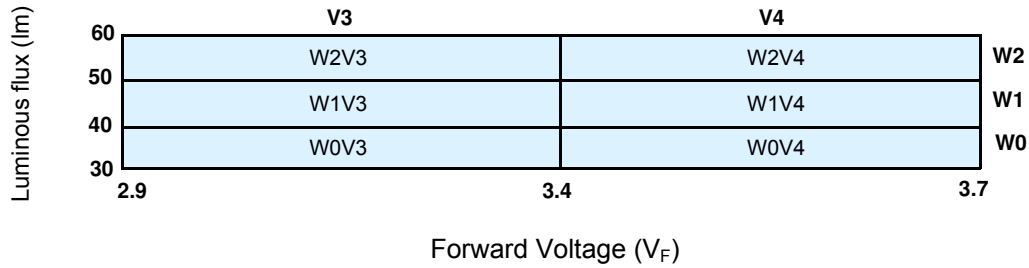


### Standard Bins

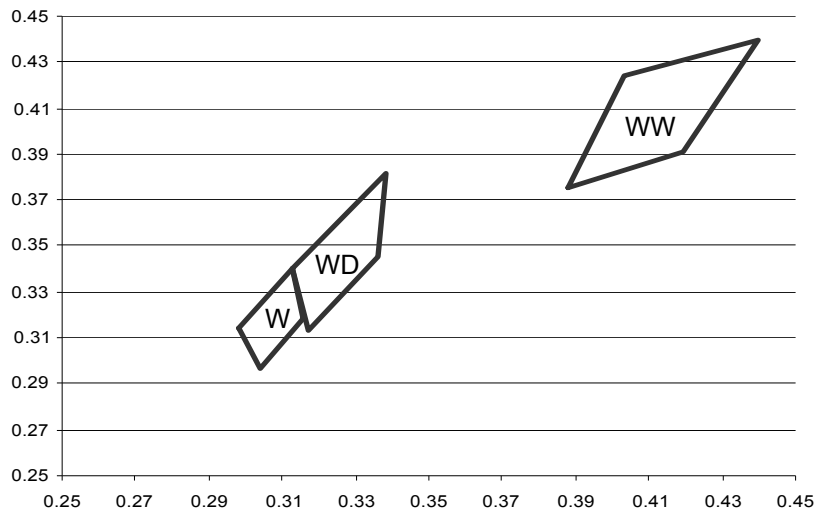
Lamps are sorted to luminous flux ( $\Phi$ ) and forward voltage ( $V_F$ ) bins shown. Orders may be filled with any or all bins contained as below.

**OVTL01LGAWW and OVTL01LGAWWS (WARM WHITE) ( $I_F = 350$  mA)**

Typical CCT 3500°K ( $\pm 300^\circ$ K)



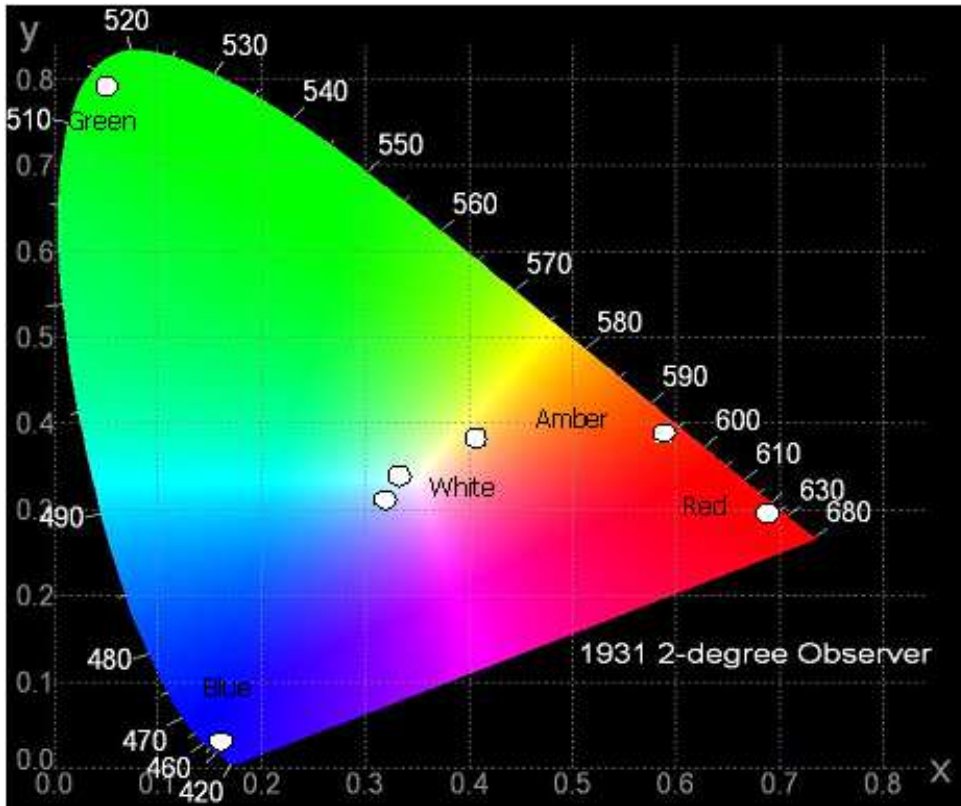
### White Color Bins



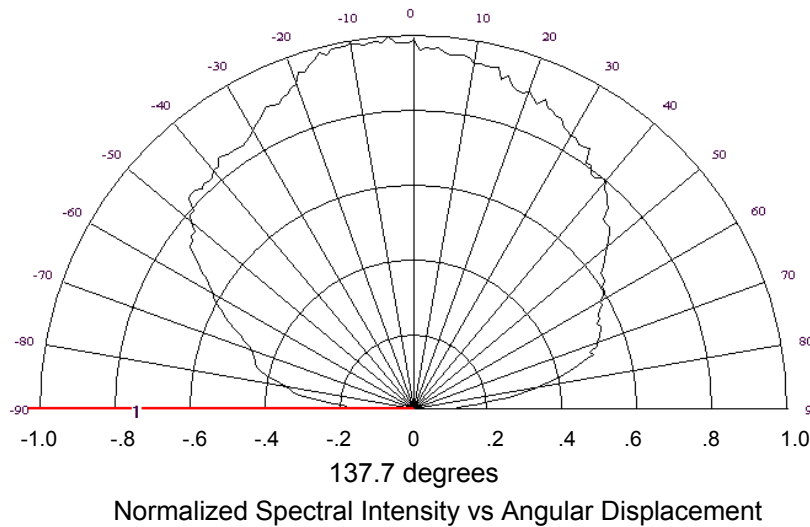
	Color	CCT
<b>W</b>	Cool White	7000°K $\pm$ 600
<b>WD</b>	Daylight White	5800°K $\pm$ 600
<b>WW</b>	Warm White	3500°K $\pm$ 300

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CIE Chromaticity Diagram



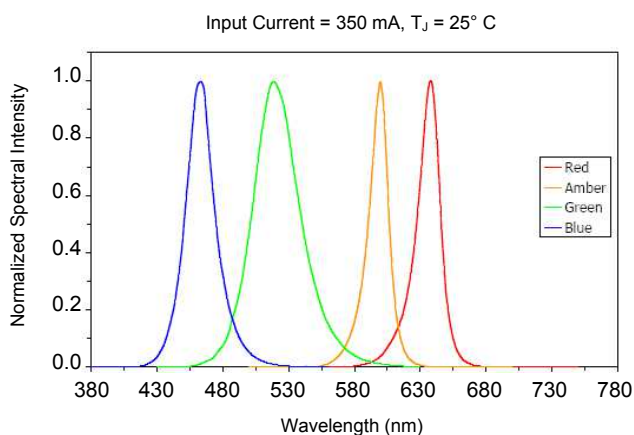
Spatial Intensity Distribution



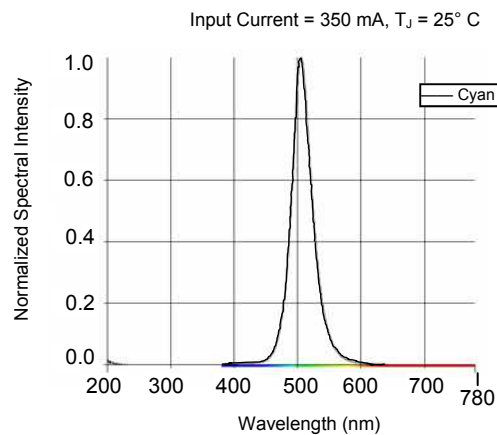
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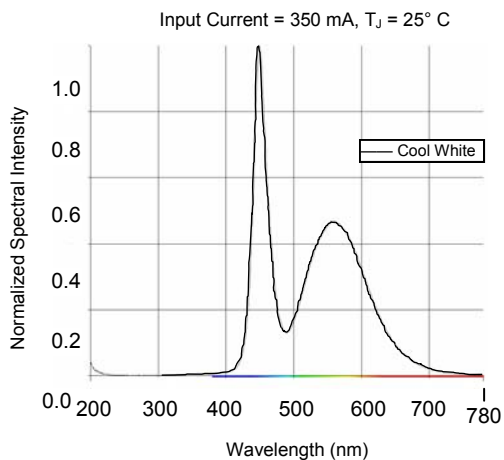
### Typical Electro-Optical Characteristics Curves



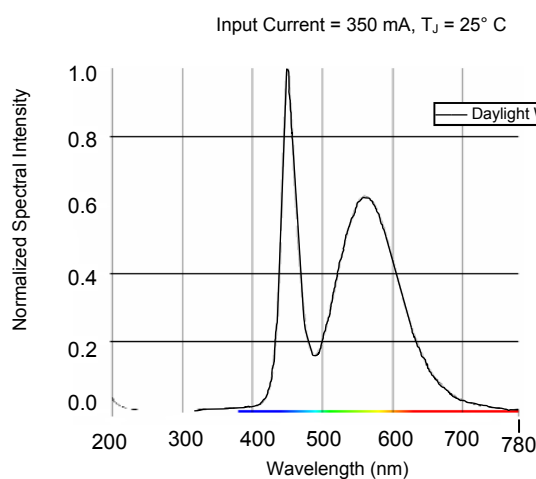
Wavelength Characteristics



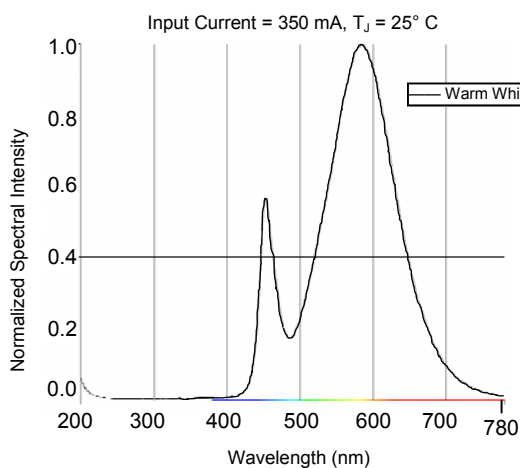
Wavelength Characteristics



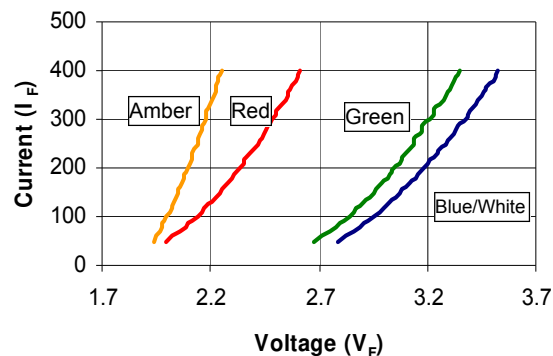
Wavelength Characteristics



Wavelength Characteristics



Wavelength Characteristics



Forward Current vs. Forward Voltage

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# Lednium Series Optimal I

## OVTLO1LGA Series

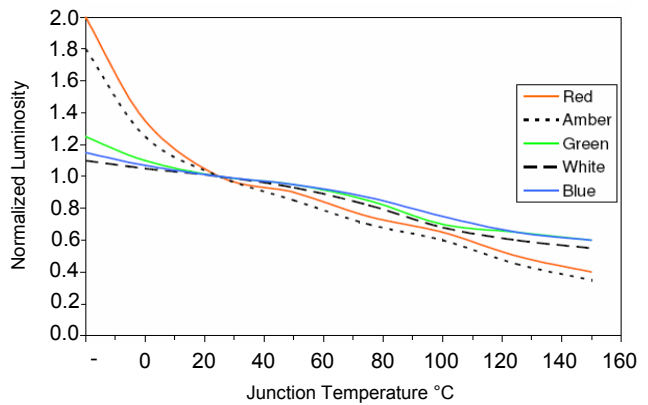


### Typical Electro-Optical Characteristics Curves

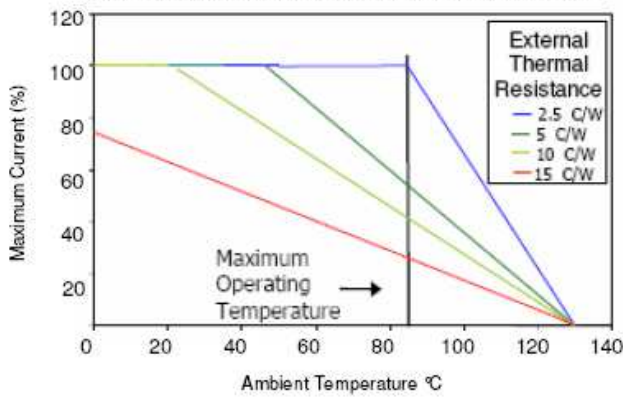
Luminosity normalized to  $T_J = 25^\circ\text{C}$

OPTEK Part Number	% Normalized Luminosity at Junction Temperature ( $^\circ\text{C}$ )					
	0	25	50	75	100	125
OVTLO1LGAA(S)	125	100	85	70	60	45
OVTLO1LGAB(S)	107	100	95	87	75	65
OVTLO1LGAG(S)	110	100	95	85	70	65
OVTLO1LGAR(S)	135	100	90	75	65	50
OVTLO1LGAW(S)	105	100	93	82	68	60
OVTLO1LGAWD(S)	105	100	93	82	68	60
OVTLO1LGAWW(S)	105	100	93	82	68	60

Luminosity normalized to  $T_J = 25^\circ\text{C}$

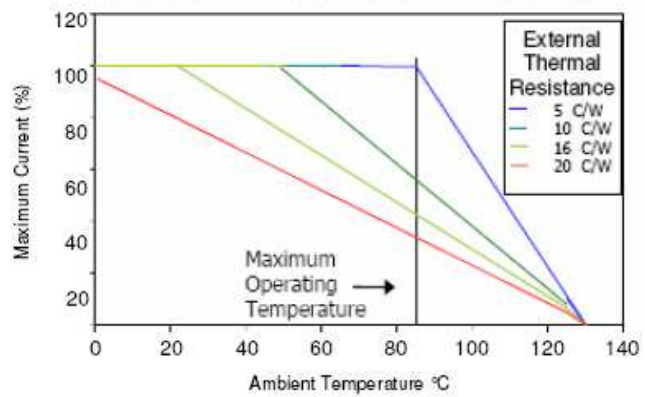


Derating of continuous forward current must be observed to prevent maximum junction temperature from being exceeded.



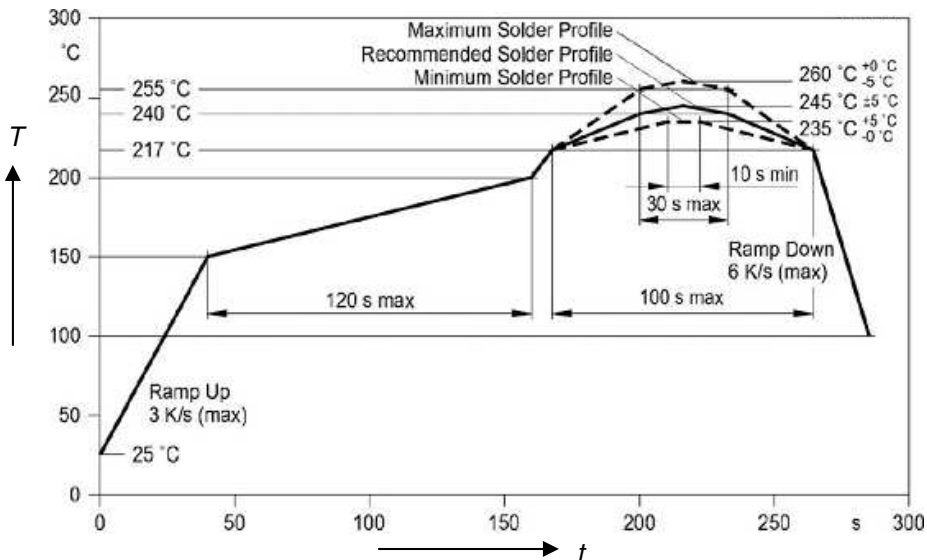
Derating Curves - Blue, Green and White LEDs

Derating of continuous forward current must be observed to prevent maximum junction temperature from being exceeded.



Derating Curves - Amber and Red LEDs

### Solder Reflow Cycle



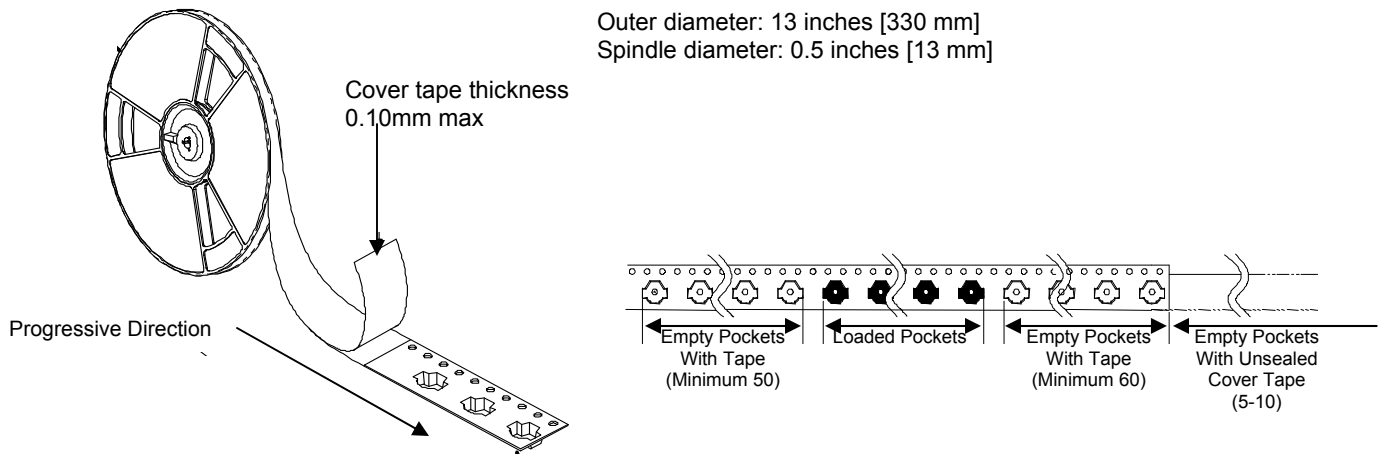
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# Lednium Series Optimal I

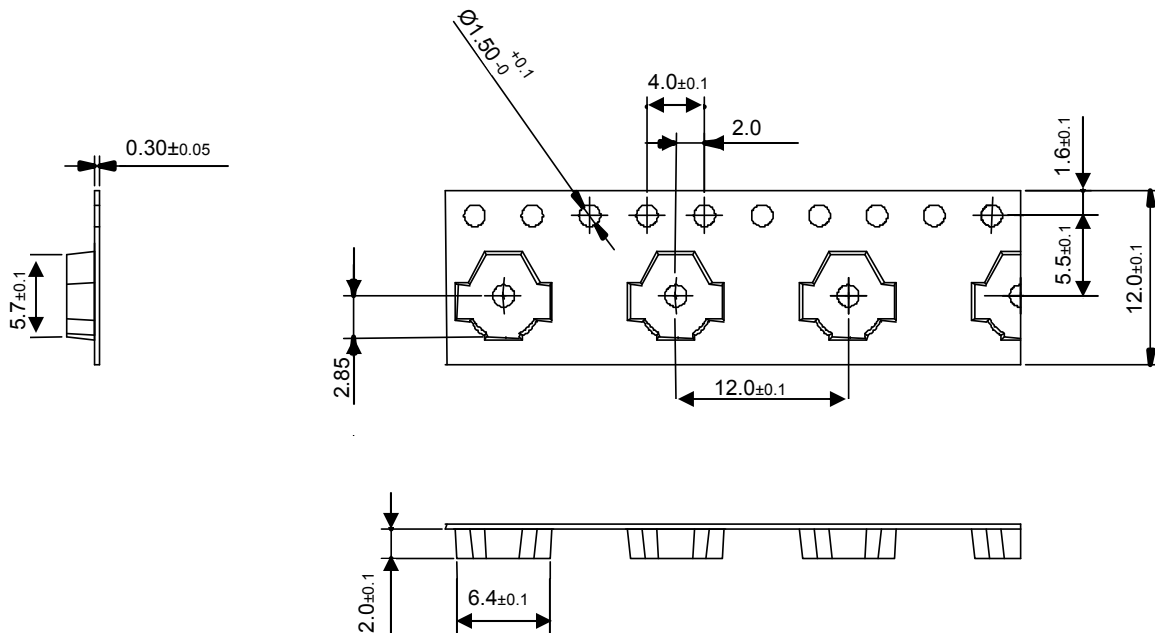
## OVTL01LGA Series



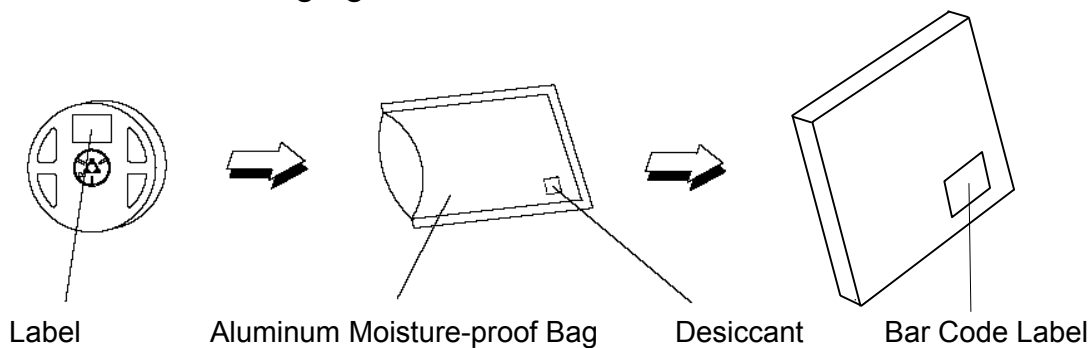
### Reel Dimensions:



### Carrier Tape Dimensions: Loaded quantity 1000 maximum pieces per reel



### Moisture Resistant Packaging



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